

AMENDMENTS TO THE CLAIMS

Please amend the claims in above-identified patent application as shown on the Claims Listing appended hereto.

CLAIMS LISTING 8/23/2004

What is claimed is:

1. (currently amended) ~~A method Method~~ for producing an active heterodimeric avian myeloblastosis virus reverse transcriptase (AMV RT) ~~AMV RT in prokaryotic host cells,~~ wherein comprising:
 - (i) ~~one or several DNA sequences(s) which code for the α and/or β chain of the AMV RT are cloned in expression plasmids~~ cloning, individually or in combination, a DNA sequence coding for an α subunit of AMV RT, a DNA sequence coding for a β subunit of AMV RT, a lacIq gene, and a dnaY gene, into one or more expression vectors,
 - (ii) ~~the expression plasmids are transformed in prokaryotic cells~~ transforming the expression vectors into *E. coli* host cells,
 - (iii) ~~the soluble expression of the heterodimeric AMV RT is induced~~ incubating the host cells under conditions suitable for expression of the α and β subunits of AMV RT, and
 - (iv) ~~isolating the recombinant active heterodimeric AMV RT~~ AMV RT is isolated from the cells.
2. (canceled)
3. (canceled)
4. (currently amended) ~~Method as claimed in one of the claims 1 to 3,~~ The method of claim 1 wherein the α as well as the β chain is fused with sequence coding for the α subunit of AMV RT further codes for a peptide sequence comprising from 2 to 10 arginine residues.
5. (currently amended) ~~Method as claimed in claim 4,~~ The method of claim 1 wherein the α or β chain is fused with a peptide sequence coding for the α subunit of AMV RT further codes for a peptide sequence comprising from composed of 2 to 10 arginine residues and the β or α chain is fused with sequence coding for the β subunit of AMV RT further codes for a peptide sequence composed of comprising from 2 to 10 histidine residues.

CLAIMS LISTING 8/23/2004

6. (canceled)
7. (canceled)
8. (canceled)
9. (canceled)
10. (canceled)
11. (currently amended) ~~Method as claimed in claim 10,~~ The method of claim 1 wherein the cloning step further comprises cloning a *trpT* gene which codes coding for the tryptophan tRNA is used as the helper gene into an expression vector.
12. (canceled)
13. (currently amended) ~~Method as claimed in claim 10 or 12,~~ The method of claim 1 wherein the ~~genes for GroEL and GroES, DnaK and DnaJ, GrpE and/or ClpB are co-expressed~~ cloning step further comprises cloning a chaperone gene selected from the group consisting of GroEL, GroES, DnaK, DnaJ, GrpE, and ClpB into an expression vector.
14. (canceled)
15. (currently amended) ~~Method as claimed in one of the claims 1 to 8, wherein suitable~~ The method of claim 1 further comprising the step of purifying the isolated active heterodimeric AMV RT by means of affinity chromatography materials are used to isolate or purify the recombinant heterodimeric AMV RT.
16. (currently amended) ~~Method as claimed in claim 15, wherein the~~ The method of claim 5 further comprising the step of purifying the isolated active heterodimeric AMV RT by means of affinity chromatography materials used for the purification reversibly bind the different peptide sequences bound to the α - and/or β -chain.
17. (canceled)

CLAIMS LISTING 8/23/2004

18. (currently amended) ~~Method as claimed in one of the claims 1 to 17,~~ The method of claim 1 wherein the DNA sequence SEQ ID NO: 5 or DNA sequences coding for the α subunit of AMV RT comprises SEQ ID NO: 4 and the DNA sequence coding for the β subunit of AMV RT comprises SEQ ID NO: 5 ~~are expressed in a prokaryotic host cell.~~
19. (canceled)
20. (currently amended) ~~Method as claimed in one of the claims 1 to 19,~~ The method of claim 1 wherein the active heterodimeric AMV RT AMV RT isolated from the cells is composed comprised of the subunits an α subunit comprising SEQ ID NO: 6 and a β subunit comprising SEQ ID NO: 7.
21. (canceled)
22. (new) The method of claim 1 wherein the sequence coding for the β subunit of AMV RT further codes for a peptide sequence comprising from 2 to 10 histidine residues.